



9.

No. 13255, dated the 24th July 1900.

From—The Personal Assistant to the Collector of Ahmednagar ;

To—The Plague Commissioner, Bombay Presidency.

I have the honour, in continuation of this office No. 9173, dated 28th October 1899, to forward further inoculation statistics for this district.

2. These statistics bring Mr. Anderson's compilation up to date and deal with the Cantonment and certain City groups.

3. Major Sarkies, I.M.S., deals with the City as a whole in a report which has been forwarded separately.

### AHMEDNAGAR INOCULATION STATISTICS—(continued).

Compiled by Mr. C. Hudson, I.C.S., Personal Assistant to the Collector of Ahmednagar.

Mr. Anderson's compilation related to nine villages. It is now necessary to deal with only four of these ; but one of them (Bhingár) is an important place. These four places are Bhingár (population 4,209), Nagardevla (population 1,116), Darevádi (population 543), and Vákodi (population 885). The other five places had no further cases. A doubtful case occurred in Arangaon in an inoculated person, which was not fatal. It was not seen by a medical officer ; it occurred nearly five months after the last case, and was followed by no other case ; so it is omitted from these calculations.

2. The statistics of these four places are governed by Mr. Anderson's remarks. Mr. Anderson has, however, through oversight omitted to mention an important concession which he allowed ; it was that inoculated cases were allowed to be treated in their own homes, and of course inoculated contacts were not disturbed. This concession had to be withdrawn after a time on Dr. Hill's representation that it was doing harm in Bhingár, but no occasion arose for putting the withdrawal into effect, and it is quite possible that Dr. Hill's fears were exaggerated. I must also mention that I tested the Bhingár figures at page 4 of Mr. Anderson's compilation. My total came to 32,889 and exceeds Mr. Anderson's by 1,551. The mistake is, however, trifling and not in favour of inoculation.

3. At the end will be found statements for the four villages named in paragraph 1. From them the following information has been boiled down :—

Place.	Average daily strength.		Number of days.	Cases.		Deaths.		REMARKS.
	Inoculated.	Uninoculated.		Inoculated.	Uninoculated.	Inoculated.	Uninoculated.	
1	2	3	4	5	6	7	8	9
Bhingár ...	3,652	478 <sup>a</sup>	85	19	24	14	19	<sup>a</sup> Column 3.—The figure is really 478·47
Nagardevla ...	521 <sup>b</sup>	521 <sup>c</sup>	81	11	13	3	17 <sup>d</sup>	<sup>b</sup> Column 2.—Correct figure is 521·2 <sup>c</sup> Column 3.—Correct figure is 521·4
Darevádi...	455 <sup>e</sup>	46 <sup>f</sup>	33	8	3	5	3	<sup>d</sup> Column 8. — 4 attacks shown in Mr. Anderson's statement appear as deaths here <sup>e</sup> Column 2.—Really 454·57
Vákodi ...	731 <sup>g</sup>	111	50	10	2	5	1	<sup>f</sup> Column 3.—Really 45·97 <sup>g</sup> Column 2.—Really 730·7

4. Therefore in Bhingár, if during this period of 85 days the inoculated had suffered to the same extent as the uninoculated, they would have had 144·4 ( $7\cdot6 \times 19$ ) deaths instead of only 14. Inoculation may, therefore, be taken to have saved 130 lives in this part of the epidemic. Similarly, at Nagardevla 14 lives were saved in 81 days. At Darevádi in 33 days 25 lives were saved, and in Vákodi in 50 days 2 lives were saved.

5. Combining the figures obtainable from the table in paragraph 3 above with the figures in Mr. Anderson's 9th paragraph, we get the following table :—

Villages.	INOCULATED UNITS.				UNINOCULATED UNITS.			
	Total.	Cases.	Deaths.	Death-rate 1 in	Total.	Cases.	Deaths.	Death-rate 1 in
Arangaon ... ..	41,083	11	6	6,847	105,246	74	48	2,192
Vákodi * ... ..	28,334	8	2	7,883	60,515	54	39	1,652
	26,535	10	5		5,550	2	1	
	54,869	18	7		66,065	56	40	
Nepti ... ..	7,443	6	2	3,721	70,348	69	54	1,302
Valunj ... ..	21,417	8	7	3,000	25,295	77	73	346
Nimblak ... ..	2,269	9	2	1,135	37,329	56	34	1,098
Bhingár * ... ..	31,338	7	5	17,987	148,800	59	47	2,863
	310,420	19	14		40,670	24	19	
	341,758	26	19		188,970	83	66	
Nagardevla * ... ..	1,384			14,534	20,565	55	45	1,013
	42,217	11	3		42,233	13	17	
	43,601	11	3		62,798	68	62	
Darevádi * ... ..	10,896	18	5	2,541	6,852	47	33	232
	15,015	8	5		1,518	3	3	
	25,411	26	10		8,370	50	36	
Hingangaon ... ..	453	3	2	226	34,635	62	42	824
Grand Total...	538,804	118	58	9,281 (Units.)	599,056	595	455	1,317

\* Figures for rest of epidemic added.

6. The table in the previous paragraph shows that, if the total inoculated units had been equal to that of the uninoculated units (difference 60,752 units in favour of latter), there would have been 64 deaths (really about 64·5). Now, this number of uninoculated units had no less than 455 deaths. Looking at it another way if the inoculated had suffered like the uninoculated 409 (really 408½ about) lives would have been lost. So inoculation saved 351 (409—58) lives. 351 in 409 is 86 per cent. (really 85·8). We have been dealing with figures nearly four times as large as Mr. Anderson's, with the result nevertheless that this percentage advances from 73·6 to 85·8, which cannot but be regarded as most satisfactory from the point of view of inoculation. These percentage figures may be taken for what they are worth (and they are distinctly worth something); but there is also another view, the inoculated had 58 deaths on 118 attacks, and the uninoculated 455 on 595. Had the former suffered in the same proportion there would have been 90 deaths instead of 58 only. In other words, whereas in the uninoculated the percentage mortality is 76·47, it is reduced among the inoculated to 49·15 or 27·32 per cent. in favour of the inoculated.

7. Lest it be said that people resort late to inoculation and that this vitiates comparisons, because the susceptible ones are attacked uninoculated and the less susceptible are inoculated (though I attach very little importance to the argument and consider that there are very good grounds for holding, as argued by Mr. Anderson, that in reality the inoculated are more exposed to infection), I give below a table comparing the courses of virulent epidemics in Bhingár and the neighbouring Cantonment of Ahmednagar with and without inoculation ;—



Locality.	Census population.	1ST EPIDEMIC.					2ND EPIDEMIC.						
		Plague mortality (i).	Mortality excluding plague. (ii).	Total of (i) and (ii).	Average mortality for the 3 years preceding plague with a brief note as to any effect epidemic disease such as cholera had on the average.	Duration of epidemic with dates.	Estimated population during the epidemic.	Plague mortality (i).	Mortality excluding plague (ii).	Total of (i) and (ii).	Average mortality for the 3 years preceding plague with a brief note as to any effect epidemic disease such as cholera had on the average.	Duration of epidemic with dates.	Estimated population during the epidemic.
Bhingár ...	5,490	52	16	68	65.3 There was no cholera during this period.	11th November 1897 to 21st March 1898.	1,600	89	53	142	48.6 excluding plague; 62 including plague.  There was no cholera.	24th August 1899 to 12th January 1900.	3,500
Cantonment .	5,606	53	19	72	15.66	22nd September 1897 to 25th December 1897.	About 4,500	71 (Exclusive of 13 imported cases).	38	109	44 (including deaths from plague and cholera 3).	18th August 1899 to 5th January 1900.	About 4,500

8. In both places during the first epidemic evacuation was relied upon, as well as opening up houses, disinfection and whitewashing, whereas, in the second, inoculation was the chief measure, and there was very little disinfection and no opening up or whitewashing. General sanitary measures remained the same in both epidemics. In Bhingár the inoculated sick were not segregated, but in the Cantonment they were. It must also be noted that the British troops in the Cantonment were not inoculated, and that about 600 must be deducted from the uninoculated population on this account. Such troops too live under totally different conditions from the ordinary native population. It is true that two non-fatal sporadic cases occurred; but this infection was dealt with by evacuation, disinfection, &c.

9. To consider the case of Bhingár first. It may be taken roughly that the population in the second epidemic was double what it was in the first, and it was an unevicted population in the second epidemic. The first epidemic lasted 4 months and 11 days; the second 4 months and 20 days; and in the first epidemic plague accounted for 52 deaths and for 89 in the second. It will also be seen that the figures of total mortality furnish no grounds of suspicion.

10. Turning now to the Cantonment, we find that the population was about the same in both epidemics. The first epidemic lasted 3 months and 3 days; the second 4 months and 19 days\*; and in the first epidemic there were 53 deaths from plague as against 71 (excluding 13 imported cases) in the second. Moreover the average mortality figures show that there is no reason to suspect the correctness of the figures.

11. I think that the results set forth in the above paragraphs may be regarded as being distinctly satisfactory and very much in favour of inoculation. Further comparing the results obtained in Bhingár with those of the Cantonment, we find that segregation of the inoculated sick probably did not do any good. From the estimated Cantonment population of 4,500 we have to deduct 600 on account of British troops, as pointed out in paragraph 8. This leaves 3,900; and 1,000 of this number consisted of native troops and their families under excellent

\* It would really be fairer to count the duration as only three months sixteen days, because though an odd case occurred in the Post Office, which is in an isolated group of bungalows, on January 5th, there was no case between December 2nd and January 5th, so that the former date may fairly be taken to mark the end of the epidemic.

discipline and care. In this population there were 71 deaths from plague, while in Bhingár (estimated population 3,500) there were 89 deaths. It may be added here that in the Cantonment the case mortality figures are peculiar. There were 64 inoculated attacks and only 24 recovered; whereas of 56 uninoculated attacks 25 recovered. But it was in the Cantonment that it was found that the dosage of Mr. Haffkine's vaccine for children needed revision, and it was revised in consequence of a representation made by Captain Walton, I.S.C., C.M. The case mortality in the case of inoculated children, very many of whom were attacked, was great, and this caused Captain Walton's representation. Captain Walton also considered that the Medical Officer Mr. Rodrigues' treatment (a decoction made from the roots of a common tall ornamental grass) was most successful.

Queries :—(i) Why did it not save inoculated children ?

(ii) Were all the other cases really plague cases ?

However, the figures are small and large deductions cannot be drawn from small figures. The solution seems certainly to lie in the original doses being insufficient for children.

12. It will be of interest for purposes of comparison to give a short account of the history of plague in Páthardi, Shevgaon Taluka. It is an outlying village of which the census population is 7,718 with a large number of weavers. As plague broke out in the fair season and the prejudice against inoculation was strong, it was decided to rely entirely on evacuation, helped by partial disinfection and a little opening up. Plague broke out on 6th December 1899. The last case occurred on 13th March 1900, and the village was fully re-occupied on 14th May 1900 without untoward result. Evacuation, though prompt, was gradual. The whole village was not evacuated till 2nd February 1900. Re-occupation began on 3rd May 1900. The epidemic reached its height on 6th February 1900. The population, when the first plague census was taken, was 5,877, and the daily average strength was 4,167·5. So that the highly beneficial effects of evacuation were demonstrated also at Páthardi. The following gives in a clearer form the history of plague in this village :—

Plague in Páthardi: Good effects of evacuation.

1. Village	...	...	...	Páthardi.
2. Census population	...	...	...	7,718
3. Population during epidemic	...	...	...	4,167·5
4. Plague broke out	...	...	...	6th December 1899.
5. Last case occurred	...	...	...	13th March 1900.
6. Total Plague cases	...	...	...	86
7. Total Plague deaths	...	...	...	70
8. Total mortality during epidemic	...	...	...	144
9. Average mortality of this period during				
3 preceding years	...	...	...	58
10. Re-occupation began	...	...	...	3rd May 1900.
11. Re-occupation ended	...	...	...	14th May 1900.
12. Plague deaths <i>per mille</i> of actual estimated				
population	...	...	...	17
13. Rate per cent. of deaths on attacks	...	...	...	81·4
14. 1 plague death in 59 units.				

#### *Inoculation in the City.*

13. Major Sarkies, I.M.S., has dealt with the city as a whole. I propose to deal with certain definite groups, the effect of inoculation in which has been specially investigated. I would premise this account by stating that the editor



of a local vernacular paper gave a long list with names and full details to show the evil effects of inoculation. A responsible native officer was accordingly ordered to make full enquiries. These enquiries proved that the list was full of gross exaggerations where it was not wilfully false; and the editor had to publish full corrections and apologise to a person under pain of prosecution for defamation; the first list had falsely stated that inoculation had rendered the above person impotent.

14. *Inoculation in the American and S. P. G. Missions.*—

(1) At my request the Rev. Dr. Hume made special enquiry on certain points and wrote as follows on April 28th, 1900 :—

“Referring to your No. 3717, dated 12th March 1900, I have the honour herewith to forward the following information about plague and inoculation so far as the American Mission in Ahmednagar City is concerned. This information has been obtained by careful enquiry and is substantially correct :—

- I. Total number inoculated 729 : of whom school girls 185, C. L. Society Normal School boys 70 : C. L. Society Model School boys 125 : High School boys 91 : men 118 : women 140.
- II. Total number uninoculated 65 : 39 men, 25 women.
- III. Number of cases among I—6, all recovered and all doing well.
- IV. Number of cases among II.—3, all fatal.
- V. Majority were inoculated by August 23rd, 1899.
- VI. No special exodus took place. The Theological Seminary of the Mission was closed on September 17th, when about 90 persons, old and young, went to other places.
- VII. Except some mentioned in VI the inoculated did not leave.
- VIII. The uninoculated did not leave.
- IX. No untoward results followed inoculation, except that perhaps 30 women and girls have had some inconvenience from swelling in the arm near where it was inoculated.”

These facts speak for themselves and may be summarised as follows :—

			Cases.	Deaths.
Inoculated, 729	...	...	6	...
Uninoculated, 65	...	...	3	3

The following reference to one of the American Mission groups occurred in the Weekly Plague Report of 15th September 1899 :—

“Inoculation has so far successfully protected the girls (180 in number) of the American Mission, in whose dormitories dead rats have been found off and on for a fortnight.”

And the following in the Weekly Plague Report of 6th October 1899 :—

“Mr. J. S. Haig has given me an interesting note showing that 270 Native Christians (another of the American Mission group) were inoculated early and exposed to infection for over a month without any ill effect. Most of them were inoculated between August 8th and 23rd, and 172 left on September 25th and 26th. 170 were living within the city walls and 98 are still left and well, though 7 dead rats and three dead squirrels have been found in and around the place where they live.”

(2) The S. P. G. results are indefinite, because of the absence of ‘control’ cases. The S. P. G. boys’ and girls’ institutions are separate, but in the same locality and about a mile from the city. It is certainly most curious that this locality should have escaped in 1899, when similarly situated localities near the city suffered without exception. In the boys’ section 130 were inoculated on August 26th and 28th, 1899, and 46 remained uninoculated. There were no cases. There was no exodus and no untoward result. In the

girls' section 126 were inoculated and 33 (new comers and servants' wives) were not inoculated. They were all inoculated by September 9th, 1899; and there was no untoward result. A doubtful case of plague or mumps occurred on October 20th, 1899. This girl, who recovered, had been inoculated in August 1899. Shortly after this doubtful case occurred, the school broke up for the usual holidays. No other cases occurred, though 20 girls remained behind during the holidays.

15. *Inoculation in the Police Force.*—

(i) In the Weekly Plague Report for 27th October 1899 the following passage occurs :—

“ Wholesale inoculation has so far saved the *City Police Lines*.”

These lines (population 250) did not return a single case after 27th October either. They are situated in the heart of the city, and cases occurred all round them. They were never evacuated throughout the epidemic.

(ii) *The Head-quarters Lines* are without the walls, though included in city limits. The City Plague Hospital is near them. They were inhabited by 500 men, women and children. Inoculation was started after 2 cases (both fatal) had occurred in them. Very partial evacuation was also resorted to, and the infected rooms were thoroughly disinfected, opened up and white-washed. Inoculation was vigorously pushed on, and all had been so protected in the space of a few days. One person was attacked shortly after being inoculated and died, and another was attacked 5 days after inoculation and recovered. No further cases occurred, inoculation stamping out the disease.

16. *Inoculation in the Máliváda, Mahár and Máng Vádas.*—The following is taken from a note supplied by Mr. J. S. Haig of the Christian Vernacular Education Society, a thoroughly trustworthy gentleman, who was almost daily in the quarter\* during the epidemic :—

Population ...	...	...	Mahárs ...	...	323
			Mángs ...	...	125
			Total ...		448

The first case (fatal) was that of a Máng on August 17th. Then there was a lull; but on October 1st there were 2 cases in the Mahárváda and one in the Mángváda on October 4th. In all there have been 6 cases in the Mahárváda (only 1 fatal) and 8 in the Mángváda (7 fatal). There was only one inoculated case (a Mahár one) which was a very mild one. Five of the Máng cases were practically in one family. All but 14 of the Mahárs were inoculated between August 15th and October 21st when the last batch of about 40 was disposed of. Of the 14, 5 are very old and 9 out at work. About October 20th to 23rd 112 of the Mángs were inoculated just after the last case that occurred. This stopped the disease. On the whole total of about 425 people there was only one inoculated case (a Mahár one), and it was not fatal. Further, the disease among the much inoculated Mahárs seems to have taken a very mild form, 5 uninoculated persons recovering. The above appeared in the weekly report of November 3rd, 1899. The facts may be summarised as follows :—

Population.	Inoculated.		Uninoculated.	
	Cases.	Deaths.	Cases.	Deaths.
425 ... ..	1	...	14	8

17. *Inoculation in the Collector's Compound.*—The Collector's bungalow is situated in one corner of the city. No case took place in the compound, which adjoins a quarter that was badly infected. Near relations of three of the servants

\* N.B.—This is a quarter just outside one of the City gates, and is inhabited by low-caste people.



got plague. Out of a total of 45 persons 39 were inoculated and 6 were not, for various reasons, such as being of very tender age, very weakly, &c. Further, it is known that not one of 27 servants and their relations living outside the compound and in infected localities got plague. All this means that I can personally vouch for not a single one of a batch of 63 inoculated units, who were exposed to infection, getting plague.

18. Below is tabulated inoculation results in certain city groups :—

Name of Locality.	Inoculated.			Uninoculated.		
	Population..	Cases.	Deaths.	Population.	Cases.	Deaths.
Block to the north of the Collector's compound ...	37	...	...	42	1	1
Block to the west of the Collector's compound ...	90	1	1	108	5	5
Latanvádi, Mahárváda, Mángváda and Dhangarvádi. ...	148	7	5	108	39	35
Nalegaon Mahárváda ...	139	6	4	47	12	6
Do. Mángváda... ..	84	1	...	24	...	...
Surjápúr, Mángváda and Gavliváda.	69	2	2	44	12	11
Total ...	567	17	12	373	69	58

The above groups were chosen as being sufficiently isolated to yield definite results, and because accurate information could be collected. The information was collected through municipal agency, a trusty Máng school-master, possessing intimate local knowledge, being used. Full details as to the inoculated attacks will be found at the end. The table may be summarised as follows :—

INOCULATED.			UNINOCULATED.		
Population.	Cases.	Deaths.	Population.	Cases.	Deaths.
567	17	12	373	69	58

Total of population dealt with = 940.

58 deaths on 373 = 88 deaths on 567. ∴ 76 lives were probably saved by inoculation. 76 on 567 is 13·4 per cent.

The general history of the disease in each group was as follows :—Cases began to occur, and then inoculation was resorted to, the operations being spread over 3 or 4 days at two meetings. Therefore the total amount of infection the uninoculated were exposed to was larger, being spread over a somewhat longer time. Even if 3·4 per cent. be deducted on this account, there still remains, so to speak, a working profit of 10 per cent. But it must also be mentioned that the first group was inoculated quite early, so that the uninoculated case in it probably occurred after nearly half of it was protected by inoculation; that the uninoculated part of the second group was to a large extent evacuated, partly compulsorily and partly voluntarily; and that in the remaining groups, all of low-caste people, very small uninoculated blocks of houses were compulsorily evacuated for every case that occurred. All this would go to show that no deduction of 3·4 per cent. is either necessary or equitable.

19. Paragraphs 14 to 18 may be very shortly summarised as follows :—

Paragraph.	Group.	INOCULATED.		
		Population.	Cases.	Deaths.
14	American Mission ... ..	729	6	...
14	S. P. G. Mission ... ..	256	1 ?	...
15	City Police Lines ... ..	250	...	...
15	Head-quarters Lines ... ..	500	2	1
16	Máliváda, Mahár and Máng Vádas .	421	1	...
17	Collector's compound ... ..	63	...	...
18	Other City groups ... ..	567	17	12
	Totals ...	2,786	27	13

It cannot be too clearly stated that these groups were chosen only because accurate information concerning them was forthcoming. We have followed the course of inoculation in 2,786 persons and find only 13 deaths of plague or 1 in 214, which is less than 5 *per mille*, and this during an epidemic (see Major Sarkies' report) when plague accounted for 1,500 deaths in an average *resident* population of less than 20,000 (between July 28th, 1899, and January 19th, 1900), which is 75 *per mille*!

C. HUDSON, I.C.S.,  
Personal Assistant to the Collector of Ahmednagar.



*Bhingár.*

Date.			Inoculated.			Uninoculated.		
			Population.	Cases.	Deaths.	Population.	Cases.	Deaths.
1			2	3	4	5	6	7
20th October 1899	...	...	2,600	...	...	1,555	1	...
21st do.	...	...	2,637	1	...	1,518	1	...
22nd do.	...	...	2,637	1	2	1,518	...	...
23rd do.	...	...	2,635	...	...	1,518	...	...
24th do.	...	...	2,707	...	...	1,445	...	1
25th do.	...	...	2,707	...	...	1,444	...	...
26th do.	...	...	2,724	...	...	1,427	2	...
27th do.	...	...	2,724	...	...	1,427	...	...
28th do.	...	...	2,724	...	...	1,427	...	...
29th do.	...	...	2,724	...	...	1,427	2	1
30th do.	...	...	2,729	1	...	1,421	...	...
31st do.	...	...	2,800	...	...	1,350	1	1
1st November 1899	...	...	2,895	...	...	1,254	...	...
2nd do.	...	...	2,895	...	...	1,254	...	...
3rd do.	...	...	2,895	...	...	1,254	...	1
4th do.	...	...	2,895	2	...	1,253	1	...
5th do.	...	...	2,895	...	1	1,253	1	...
6th do.	...	...	3,108	...	...	1,039	2	...
7th do.	...	...	3,108	...	...	1,039	...	...
8th do.	...	...	3,108	...	...	1,039	1	1
9th do.	...	...	3,108	...	...	1,038	...	...
10th do.	...	...	3,152	...	...	994	...	...
11th do.	...	...	3,152	1	...	994	...	...
12th do.	...	...	3,152	1	1	994	1	...
13th do.	...	...	3,151	...	...	994	...	...
14th do.	...	...	3,151	...	1	994	2	3
15th do.	...	...	3,241	...	...	900	1	2
16th do.	...	...	3,312	3	...	827	4	...
17th do.	...	...	3,312	...	1	821	...	1
18th do.	...	...	3,479	2	3	659	1	3
19th do.	...	...	3,565	...	...	567	...	2
20th do.	...	...	3,565	2	1	565	...	...
21st do.	...	...	3,833	...	2	296	1	...
22nd do.	...	...	3,831	...	...	296	...	...
23rd do.	...	...	3,952	1	1	175	1	1
24th do.	...	...	3,951	...	...	174	...	...
25th do.	...	...	4,055	1	...	70	...	...
26th do.	...	...	4,055	...	1	70	...	...
27th do.	...	...	4,054	...	...	70	...	1
28th do.	...	...	4,054	2	...	69	...	...
29th do.	...	...	4,054	...	...	69	...	...
30th do.	...	...	4,054	...	...	69	...	...
1st December 1899	...	...	4,054	...	...	69	...	...
2nd do.	...	...	4,054	...	...	69	...	...
3rd do.	...	...	4,054	...	...	69	...	...
4th do.	...	...	4,054	...	...	69	...	...
5th do.	...	...	4,054	...	...	69	...	...
6th do.	...	...	4,054	...	...	69	...	...
7th do.	...	...	4,054	...	...	69	...	...
8th do.	...	...	4,054	...	...	69	...	...
9th do.	...	...	4,054	...	...	69	...	...
10th do.	...	...	4,054	...	...	69	...	...
11th do.	...	...	4,054	...	...	69	...	...
12th do.	...	...	4,054	...	...	69	...	...
13th do.	...	...	4,054	...	...	69	...	...
14th do.	...	...	4,081	...	...	42	...	...
15th do.	...	...	4,081	...	...	42	...	...
16th do.	...	...	4,081	...	...	42	...	...
17th do.	...	...	4,081	...	...	42	...	...
18th do.	...	...	4,081	...	...	42	...	...
19th do.	...	...	4,081	...	...	42	...	...

Date.				Inoculated.			Uninoculated.		
				Population.	Cases.	Deaths.	Population.	Cases.	Deaths.
1				2	3	4	5	6	7
20th December 1899	...	...	...	4,081	...	...	42	...	...
21st do.	...	...	...	4,081	...	...	42	...	...
22nd do.	...	...	...	4,081	...	...	42	...	...
23rd do.	...	...	...	4,081	...	...	42	...	...
24th do.	...	...	...	4,081	...	...	42	...	...
25th do.	...	...	...	4,081	...	...	42	...	...
26th do.	...	...	...	4,081	...	...	42	...	...
27th do.	...	...	...	4,081	...	...	42	...	...
28th do.	...	...	...	4,081	...	...	42	...	...
29th do.	...	...	...	4,081	...	...	42	1	...
30th do.	...	...	...	4,081	...	...	42	...	1
31st do.	...	...	...	4,081	...	...	41	...	...
1st January 1900	...	...	...	4,081	...	...	41	...	...
2nd do.	...	...	...	4,081	...	...	41	...	...
3rd do.	...	...	...	4,081	...	...	41	...	...
4th do.	...	...	...	4,081	...	...	41	...	...
5th do.	...	...	...	4,081	...	...	41	...	...
6th do.	...	...	...	4,081	...	...	41	...	...
7th do.	...	...	...	4,081	...	...	41	...	...
8th do.	...	...	...	4,081	...	...	41	...	...
9th do.	...	...	...	4,081	...	...	41	...	...
10th do.	...	...	...	4,081	...	...	41	...	...
11th do.	...	...	...	4,081	...	...	41	...	...
12th do.	...	...	...	4,081	1	...	41	...	...
				.....	19	14	.....	24	19
Average daily strength for 85 days ...				3,652	...	...	478.47	...	...

*Progress of Inoculation at Bhingár, Táluka Nagar.*

Date of Inoculation.				Population.	Time of inoculation.		REMARKS.
1				2	3	4	
20th October 1899 ..	...	...	...	210*	At 8 A.M.	...	* Of these 151 were inoculated by Mr. Fernandes ; hour not known; the other 59 were inoculated at 8 A.M.
21st do.	...	...	...	37	Do.		
24th do.	...	...	...	73	Do.		
26th do.	...	...	...	17	At 4 P.M.		
30th do.	...	...	...	5	Do.		
31st do.	...	...	...	71	At 8 A.M.		
1st November 1899	...	...	...	95	Do.		
6th do.	...	...	...	214	7 to 10 A.M.		
10th do.	...	...	...	44	At 8 A.M.		
15th do.	...	...	...	91	Do.		
16th do.	...	...	...	71	Do.		
18th do.	...	...	...	167	Do.		
19th do.	...	...	...	89	Do.		
21st do.	...	...	...	269	7 to 12 A.M.		
23rd do.	...	...	...	121	8 to 10 A.M.		
25th do.	...	...	...	104	4 to 5 P.M.		
14th December 1899	...	...	...	27	Do.		
Total ...				1,705			

No.	Name.	Caste.	Age.	Sex.		Date of inoculation.	Date of attack.	Interval in hours between the date of inoculation and the date of attack.	Result.	
				Male.	Female.				Died.	Cured.
1	2	3	4	5	6	7	8	9	10	11
1	Balvant Tatyá Dhadge ...	Máli	22	1	...	13th October 1899, at 9 A.M.	21st October 1899, at 6 A.M.	189	22nd October 1899. ...	...
2	Bai father Anant Gondle ...	Do.	1½	...	1	Do.	22nd October 1899, at 6 A.M.	213	Do. ...	...
3	Dattatraya Sitaram ...	Brahmin	22	1	...	16th October 1899, at 8 A.M.	30th October 1899, at 10 A.M.	338	.....	Cured.
4	Yadu walad Mahadu ...	Rámoshi	15	1	...	Do.	4th November 1899, at 10 A.M.	458	.....	Do.
5	Lakshman walad Sambu...	Gondhali	25	1	...	13th October 1899, at 11 A.M.	4th November 1899, at 7 A.M.	524	5th November 1899....	...
6	Sitábái kom Ramechandra ...	Brahmin	40	...	1	31st October 1899, at 5 P.M.	11th November 1899, at 4 P.M.	263	14th November 1899....	...
7	Baji mard Maruti Gargute.	Kunbi	35	...	1	13th October 1899, at 10 A.M.	12th November 1899, at 8 A.M.	718	12th November 1899....	...
8	Arjuna walad Siwa Wagh	Do.	30	1	...	13th October 1899, at 10 A.M.	16th November 1899, at 4 P.M.	802	17th November 1899....	...
9	Gunábái mard Maruti ...	Do.	12	...	1	11th October 1899, at 9 A.M.	Do.	863	18th November 1899....	...
10	Kasiba Narayen,	Do.	17	1	...	14th October 1899, at 11 A.M.	16th November 1899, at 8 A.M.	789	Do. ...	...
11	Dhondi mard Bapu ...	Do.	25	...	1	Do.	18th November 1899, at 8 A.M.	837	Do ...	...
12	Sitaram Shankar	Brahmin	25	1	...	16th November 1899, at 11 A.M.	18th November 1899, at 4 P.M.	53	21st November 1899....	...
13	Ramechandra walad Bala ...	Koshti	22	1	...	10th October 1899, at 9 A.M.	20th November 1899, at 12 A.M.	843	Do. ...	...
14	Jamna mard Narayen ...	Do.	70	...	1	6th November 1899, at 8 A.M.	20th November 1899, at 4 A.M.	596	20th November 1899....	...
15	Narayen walad Khandu ...	Kunbi	80	1	...	6th September 1899, at 8 A.M.	23rd November 1899, at 6 A.M.	1,126	23rd November 1899....	...
16	Bairam walad Namdev ...	Koshti	35	1	...	24th September 1899, at 9 A.M.	25th November 1899, at 8 A.M.	743	26th November 1899..	...
17	Dattatraya Raghunath ...	Kasar	15	1	...	30th October 1899, at 4 P.M.	28th November 1899, at 9 A.M.	665	.....	Cured.
18	Ramechandra Raghunath ...	Do.	4	1	...	25th November 1899, at 4 P.M.	Do.	65	.....	Do.
19	Yeshwada kom Bapu ...	Brahmin	17	...	1	21st November 1899, at 4 P.M.	12th January 1900, at 10 A.M.	498	.....	Do.



*Nagardevla.*

Date.		Inoculated.			Uninoculated.		
		Population.	Cases.	Deaths.	Population.	Cases.	Deaths.
1		2	3	4	5	6	7
14th	October 1899	290	...	...	782	1	4
15th	do.	290	...	...	778	2	2
16th	do.	304	...	...	762	...	3
17th	do.	403	2	...	660	...	...
18th	do.	403	1	...	660	...	...
19th	do.	403	1	...	660	2	1
20th	do.	509	...	...	553	...	...
21st	do.	509	...	...	553	1	...
22nd	do.	509	...	...	553	1	1
23rd	do.	509	2	...	552	...	1
24th	do.	509	...	...	551	1	...
25th	do.	509	...	...	551	1	1
26th	do.	536	...	...	523	...	...
27th	do.	536	1	...	523	...	...
28th	do.	536	...	1	523	1	...
29th	do.	535	...	...	523	...	...
30th	do.	535	...	...	523	...	...
31st	do.	535	...	...	523	...	...
1st	November 1899	543	...	...	515	...	...
2nd	do.	543	...	...	515	...	...
3rd	do.	543	...	...	515	...	...
4th	do.	543	...	...	515	...	...
5th	do.	543	...	1	515	...	...
6th	do.	547	...	...	510	...	...
7th	do.	547	...	...	510	...	...
8th	do.	547	...	...	510	...	...
9th	do.	547	...	...	510	1	...
10th	do.	547	...	...	510	...	...
11th	do.	547	...	...	510	...	1
12th	do.	547	...	...	509	...	...
13th	do.	547	...	...	509	...	...
14th	do.	547	...	...	509	...	...
15th	do.	547	...	...	509	...	...
16th	do.	547	...	...	509	...	...
17th	do.	547	...	...	509	...	...
18th	do.	547	...	...	509	...	...
19th	do.	547	1	...	509	...	...
20th	do.	547	1	...	509	...	...
21st	do.	547	...	...	509	1	...
22nd	do.	547	...	...	509	1	...
23rd	do.	547	...	...	509	...	1
24th	do.	547	...	...	508	...	...
25th	do.	547	...	1	508	...	...
26th	do.	546	...	...	508	...	1
27th	do.	546	...	...	507	...	1
28th	do.	546	...	...	506	...	...
29th	do.	546	...	...	506	...	...
30th	do.	546	...	...	506	...	...
1st	December 1899	546	...	...	506	...	...
2nd	do.	546	...	...	506	...	...
3rd	do.	546	...	...	506	...	...
4th	do.	546	...	...	506	...	...
5th	do.	546	...	...	506	...	...
6th	do.	546	...	...	506	...	...
7th	do.	546	...	...	506	...	...
8th	do.	546	...	...	506	...	...
9th	do.	546	...	...	506	...	...
10th	do.	546	...	...	506	...	...
11th	do.	546	...	...	506	...	...

*Nagardevla*—continued.

Date.	Inoculated.			Uninoculated.		
	Pop lation.	Cases.	Deaths.	Population.	Cases.	Deaths.
1	2	3	4	5	6	7
12th December 1899 ...	546	...	...	506	...	...
13th do. ...	546	...	...	506	...	...
14th do. ...	546	...	...	506	...	...
15th do. ...	546	...	...	506	...	...
16th do. ...	546	...	...	506	...	...
17th do. ...	546	...	...	506	...	...
18th do. ...	546	...	...	506	...	...
19th do. ...	546	...	...	506	...	...
20th do. ...	546	...	...	506	...	...
21st do. ...	546	...	...	506	...	...
22nd do. ...	546	...	...	506	...	...
23rd do. ...	546	...	...	506	...	...
24th do. ...	546	...	...	506	...	...
25th do. ...	546	...	...	506	...	...
26th do. ...	546	...	...	506	...	...
27th do. ...	546	...	...	506	...	...
28th do. ...	546	...	...	506	...	...
29th do. ...	546	...	...	506	...	...
30th do. ...	546	...	...	506	...	...
31st do. ...	546	1	...	506	...	...
1st January 1900 ...	546	...	...	506	...	...
2nd do. ...	546	1	...	506	...	...
	...	11	3	...	13	17
Average strength for 81 days.	521.2	...	...	521.4	...	...

*Progress of Inoculation at Nagardevla, Taluka Nagar.*

Date of Inoculation.		Population.	Time of Inoculation.	REMARKS.
16th October 1899	...	14	At 8 A. M.	
17th do.	...	99	Do.	
20th do.	...	106	Do.	
26th do.	...	27	Do.	
1st November 1899	...	8	At 7 A. M.	
6th do.	...	5	Do.	
Total		259		

*Attacks amongst the inoculated persons at Nagardeola, Taluka Nagar.*

No.	Name.	Caste.	Age.	SEX.		Date of Inoculation.	Date of attack.	Interval in hours between the date of inoculation and the date of attack.	Result.		REMARKS.
				Male.	Female.				Died.	Cured.	
1	2	3	4	5	6	7	8	9	10	11	12
1	Mahalu mard Yanku ...	Máli .	60	...	1	11th October 1899, at 9 A.M.	17th October 1899, at 6 A.M.	141	.....		Cured.
2	Vithal valad Pandurang ...	Do.	18	1	...	11th October 1899, at 9 A.M.	17th October 1899, at 9 A.M.	Do.	....		Do.
3	Siti wife of Sáylerám ...	Do.	14	...	1	9th October 1899, at 8 A.M.	18th October 1899, at 5 A.M.	213	.....		Do.
4	Rámchandra valad Santu .	Do.	7	1	...	8th October 1899, at 8 A.M.	19th October 1899, at 4 P.M.	272	.....		Do.
5	Yeshvada mard Kesu ...	Do.	30	...	1	17th October 1899, at 9 A.M.	23rd October 1899, at 6 A.M.	141	5th November 1899	...	
6	Rahi wife of Kondáji ...	Do.	38	...	1	11th October 1899, at 9 A.M.	23rd October 1899, at 6 A.M.	285	.....		Cured.
7	Yeshvanta valad Ránji ...	Do.	32	1	...	8th October 1899, at 8 A.M.	27th October 1899, at 8 A.M.	456	28th October 1899	...	
8	Bála valad Bhága...	Do.	30	1	...	11th October 1899, at 9 A.M.	19th November 1899, at 6 A.M.	189	25th November 1899.	...	
9	Máruṭi valad Yenku ...	Do.	35	1	...	20th October 1899, at 9 A.M.	20th November 1899, at 7 A.M.	742	.....		Cured.
10	Pila valad Dhondi ...	Do.	35	1	...	26th October 1899, at 10 A.M.	31st December 1899, at 10 A.M.	864	.....		Do.
11	Sita husband Piláji ...	Do.	30	...	1	17th October 1899, at 9 A.M.	2nd January 1900, at 6 A.M.	1,845	.....		Do.



*Darewádi.*

Date.	Inoculated.			Uninoculated.		
	Population.	Cases.	Deaths.	Population.	Cases.	Deaths.
1	2	3	4	5	6	7
14th October 1899 ... ..	457	...	...	48	...	...
15th " ... ..	457	2	...	48	1	...
16th " ... ..	457	3	1	48	...	...
17th " ... ..	456	...	...	48	...	...
18th " ... ..	456	...	1	48	...	...
19th " ... ..	455	...	...	48	...	...
20th " ... ..	456	...	...	47	...	...
21st " ... ..	456	...	1	47	...	...
22nd " ... ..	455	...	...	47	...	...
23rd " ... ..	455	...	...	47	...	...
24th " ... ..	455	...	...	47	...	1
25th " ... ..	455	1	...	46	...	...
26th " ... ..	455	...	...	46	...	...
27th " ... ..	455	...	...	46	...	...
28th " ... ..	455	...	1	46	...	...
29th " ... ..	454	...	...	46	...	...
30th " ... ..	454	...	...	46	...	...
31st " ... ..	454	...	...	46	...	...
1st November 1899 ... ..	454	...	...	46	...	...
2nd " ... ..	454	...	...	46	...	...
3rd " ... ..	454	...	...	46	...	1
4th " ... ..	454	...	...	45	...	...
5th " ... ..	454	...	...	45	...	...
6th " ... ..	454	...	...	45	...	...
7th " ... ..	454	...	...	45	...	...
8th " ... ..	454	1	...	45	2	...
9th " ... ..	454	...	1	45	...	1
10th " ... ..	453	...	...	44	...	...
11th " ... ..	453	...	...	44	...	...
12th " ... ..	453	...	...	44	...	...
13th " ... ..	453	...	...	44	...	...
14th " ... ..	453	...	...	44	...	...
15th " ... ..	453	1	...	44	...	...
	.....	8	5	.....	3	3
Average daily strength for 33 days.	454.57	...	...	45.97	...	...

*Progress of Inoculation at Darewádi, Táluka Nagar.*

Date of Inoculation.	Population.	Time of Inoculation.	REMARKS.
20th October 1899 ... ..	1	11 A.M.	
25th November 1899 ... ..	30	9 A.M.	
Total ... ..	31		

## Attacks amongst the inoculated persons at Darewadi, Tuluka Nagar.

No.	Name.	Caste.	Age.	Sex.		Date of Inoculation.	Date of attack.	Interval in hours between the date of inoculation and the date of attack.	Result.		REMARKS.
				Male.	Female.				Died.	Cured.	
1	2	3	4	5	6	7	8	9	10	11	12
1	*Honya valad Han- manta.	Mahar...	20	1	...	4th October 1899 ...	13th October 1899...	213	18th October 1899.	...	* Attack shown in Mr. Anderson's statistics, No. 18, page 24.
2	Satoo valad Dhondi ...	Kunbi...	50	1	...	4th October 1899, at 8 A.M.	15th October 1899, at 6 A.M.	262	16th October 1899.	...	
3	Daji valad Rama ...	Mahar...	30	1	...	Do. do. ...	Do. ...	262	....	Cured.	
4	Nira wife of Rama ...	Do. ..	35	...	1	20th September 1899, at 10 A.M.	16th October 1899, at 11 A.M.	625	21st October 1899.	...	
5	Rabha valad Pandu...	Do. ...	20	1	...		Do. ...	625	....	Cured.	
6	Arjuna valad Gulba ...	Do. ...	3	1	...		16th October 1899, at 9 P.M.	635	....	Do.	
7	Savitra wife of Bhiku.	Do. ...	75	...	1	20th September 1899, at 10 A.M.	25th October 1899, at 7 A.M.	837	28th October 1899.	...	
8	Nama valad Hariba ...	Do. ...	55	1	...		8th November 1899, at 6 A.M.	1,172	9th November 1899.	...	
9	Dashratha valad Govinda.	Do. ...	24	1	...		15th November 1899, at 6 A.M.	1,340	....	Cured.	

## Fákodi.

Date.	Inoculated.			Uninoculated.		
	Population.	Cases.	Deaths.	Population.	Cases.	Deaths.
1	2	3	4	5	6	7
13th October 1899 ...	733	...	...	111	...	...
14th " ...	733	...	...	111	...	...
15th " ...	733	...	...	111	...	...
16th " ...	733	...	...	111	...	...
17th " ...	733	...	...	111	...	...
18th " ...	733	2	...	111	1	...
19th " ...	733	...	1	111	...	...
20th " ...	732	...	...	111	...	...
21st " ...	732	...	...	111	...	...
22nd " ...	732	...	...	111	...	...
23rd " ...	732	...	...	111	...	...
24th " ...	732	...	...	111	...	...
25th " ...	732	...	...	111	...	...
26th " ...	732	...	...	111	...	...
27th " ...	732	...	...	111	...	...
28th " ...	732	...	...	111	...	...
29th " ...	732	...	1	111	...	...
30th " ...	731	...	...	111	...	...
31st " ...	731	1	...	111	...	...
1st November 1899 ...	731	...	...	111	...	...
2nd " ...	731	1	...	111	...	...
3rd " ...	731	...	...	111	...	...
4th " ...	731	...	...	111	...	...
5th " ...	731	...	...	111	...	...
6th " ...	731	...	1	111	...	...
7th " ...	730	...	...	111	...	...
8th " ...	730	...	...	111	...	...
9th " ...	730	...	...	111	...	...
10th " ...	730	...	...	111	...	...
11th " ...	730	...	...	111	...	...
12th " ...	730	...	...	111	...	...
13th " ...	730	...	...	111	...	...
14th " ...	730	...	...	111	...	...
15th " ...	730	...	...	111	...	...
16th " ...	730	1	...	111	...	...
17th " ...	730	...	...	111	...	...
18th " ...	730	...	...	111	...	...
19th " ...	730	...	...	111	...	...
20th " ...	730	...	...	111	...	...
21st " ...	730	...	...	111	...	...
22nd " ...	730	...	...	111	...	...
23rd " ...	730	3	1	111	...	...
24th " ...	729	2	...	111	...	...
25th " ...	729	...	1	111	...	...
26th " ...	728	...	...	111	...	...
27th " ...	728	...	...	111	...	...
28th " ...	728	...	...	111	...	...
29th " ...	728	...	...	111	...	...
30th " ...	728	...	...	111	1	...
1st December 1899 ...	728	...	...	111	...	1
	...	10	5	...	2	1
Average daily strength for 50 days.	730.7	...	...	111	...	...



*Progress of Inoculation at Vihodi, Taluka Nagar.*

Date of Inoculation.	Population.	Time of Inoculation.	REMARKS.
1	2	3	4
<i>Blank.</i>			

No.	Name.	Caste.	Age.	Sex.		Date of inoculation.	Date of attack.	Interval in hours between the date of inoculation and the date of attack.	Result.		Remarks.
				Male.	Female.				Died.	Cured.	
1	2	3	4	5	6	7	8	9	10	11	12
1	*Rakhama valad Pilaji .	Kunbi	22	1	...	6th September 1899, at 10 A.M.	7th October 1899, at 6 A.M.	746	19th October 1899 ...	...	* Attacks shown in Mr. Anderson's statement Nos. 6 and 7, page 7.
2	*Sambhu valad Mahadn.	Mahár	50	1	...	10th September 1899, at 10 A.M.	Do. ..	644	29th October 1899 ...	...	
3	Jai, father Savalaram .	Do.	9	...	1	6th September 1899, at 8 A.M.	18th October 1899, at 5 P.M.	1,017	.....	Cured.	
4	Topa, father Savlya ...	Do.	12	1	...	Do. ...	Do. ...	Do.	.....	Do.	
5	Ratachand Moritam .	Márwádi	22	1	...	Do. ...	31st October 1899, at 11 A.M.	1,323	6th November 1899...	...	
6	Jayvanta valad Yesoo .	Kunbi	25	1	...	10th September 1899, at 10 A.M.	2nd November 1899, at 9 A.M.	1,271	.....	Cured.	
7	Kadha wife of Sakbaram.	Barber	13	...	1	6th September 1899, at 9 A.M.	16th November 1899, at 10 A.M.	1,705	.....	Do.	
8	Soni, father Bahiraji .	Kunbi	10	...	1	22nd August 1899, at 9 A.M.	23rd November 1899, at 3 A.M.	2,586	.....	Do.	
9	Tai wife of Ravji ...	Do.	40	...	1	Do. ...	Do. ...	Do.	25th November 1899.	...	
10	Bahirji valad Luxuman.	Do.	30	1	...	Do. ...	Do. ...	Do.	23rd November 1899.	...	
11	Gaya wife of Bapu ...	Ramoshi	60	...	1	6th September 1899, at 10 A.M.	24th November 1899, at 2 P.M.	1,900	.....	Cured.	
12	Shwya valad Bajiram.	Kunbi	4	1	...	Do. ...	24th November 1899, at 10 A.M.	1,896	.....	Do.	

No.	Name.	Caste.	Age.	Sex.		Date of Inoculation.	Date of attack.	Interval in hours between the date of inoculation and the date of attack.	Result.		Remarks.
				Male.	Female.				Died.	Cured.	
1	2	3	4	5	6	7	8	9	10	11	12
1	Budharam Chintaman.	Pardeshi ...	40	1	...	15th September 1899.	9th October 1899 ..	...	13th October 1899 ...	...	

Attacks amongst the inoculated at Latavadi, Mahirvada, Mangrada and Dhargarvadi.

No.	Name.	Caste.	Age.	Sex.		Date of Inoculation.	Date of attack.	Interval in hours between the date of inoculation and the date of attack.	Result.		Remarks.
				Male.	Female.				Died.	Cured.	
1	2	3	4	5	6	7	8	9	10	11	12
1	Luxuman Nama ...	Mang	40	1	...	...	...	...	21st September 1899.	...	
2	Lahanu Khandu ...	Maratha	12	1	...	24th September 1899.	28th September 1899.	...	20th do.	...	
3	Rani mard Khandu ...	Do.	50	...	1	21st do.	28th do.	...	28th do.	...	
4	Ganpat Rangrao ...	Bráhma	6	1	...	17th do.	24th do.	...	...	...	Cured.
5	Lahanu Khandu ...	Dhangar	26	1	...	24th do.	1st October 1899 ..	...	4th October 1899	...	
6	Luxuman Aba ...	Mali	25	1	...	25th do.	29th September 1899.	...	1st do.	...	
7	Krishnabai kom Rangrao.	Bráhma	28	...	1	...	20th do.	...	...	...	Cured.



*Attacks amongst the inoculated at Nalegaon, Mahārashtra and Māngvāda.*

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No.	Name.	Caste.	Age.	Sex.		Date of Inoculation.	Date of attack.	Interval in hours between the date of inoculation and the date of attack.	Result.		Remarks.
				Male.	Female.				Died.	Cured.	
1	2	3	4	5	6	7	8	9	10	11	12
1	Maruti Sabadu ...	Mahār	7	1	...	18th September 1899.	27th September 1899.	...	27th September 1899.	...	
2	Tulsabai Bap Shivram.	Do.	5	...	1	25th do.	28th do.	...	28th do.	...	
3	Mainabai kom Suraji.	Do.	40	...	1	18th do.	28th do.	...	.....	Cured.	
4	Laxuman Mahadu ...	Do.	30	1	...	27th October 1899 ...	3rd November 1899.	...	5th November 1899.	...	
5	Shankar Gyanu ...	Do.	20	1	...	24th September 1899.	25th September 1899.	...	3rd October 1899 ...	...	
6	Sonu Bap Tatyā ...	Do.	7	...	1	18th do.	28th do.	...	.....	Cured.	
7	Jai mard Dharma ...	Māng	20	...	1	27th do.	28th do.	...	.....	Do.	

*Attacks amongst the inoculated at Sarjāpur Māngvāda.*

No.	Name.	Caste.	Age.	Sex.		Date of Inoculation.	Date of attack.	Interval in hours between the date of inoculation and the date of attack.	Result.		Remarks.
				Male.	Female.				Died.	Cured.	
1	2	3	4	5	6	7	8	9	10	11	12
1	Bhagu Bap Laxuman.	Māng	14	...	1	18th September 1899.	22nd September 1899.	...	26th September 1899.	...	
2	Rangoo mard Kawoo.	Do.	28	...	1	Do.	26th do.	...	30th do.	...	

No. 1685 of 1900.

From—W. M. Haffkine, Esq., C.I.E., Director-in-Chief, Plague Research Laboratory ;

To—The Under Secretary to Government, General Department (Plague), Bombay.

With reference to your No. 5513-P. of 18th ultimo, I have the honour to return the papers from C. Hudson, Esq., I.C.S., and to state that they have been studied in this Laboratory, and the data contained in them appear to have been arrived at after careful inquiry. Their publication is therefore recommended as very desirable.

The following remarks have suggested themselves:—

*As to paragraph 6.*—At the end of this paragraph the sense would be made clearer if it read thus—

“In other words . . . . the percentage mortality *among plague cases* is,” etc. etc.

*As to paragraph 7.*—(Appended table).

1. The columns of mortality might with advantage state to what period of time the mortality shown refers—whether to a year or to the period of the epidemic only.

2. The column for the duration of the epidemic might show the number of days the epidemic lasted as well as the dates of commencement and cessation.

3. In the column for the average mortality for the second epidemic it might be better to write “For the 3 years preceding *the present epidemic*,” instead of “For the three years preceding plague.”

*As to paragraphs 9 and 10.*—In the case of Bhingár (paragraph 9) one notices that in the first epidemic the mortality, excluding plague = 16, while in the second epidemic it = 53. Now in the second epidemic the population = about double that in the first, but the “Mortality, excluding plague” = more than three times that of the first epidemic.

In the case of Cantonment (paragraph 10) the population was the same in both epidemics, but the second epidemic is reckoned about half as long again as the first. The mortality excluding plague, however, is, in the second epidemic, twice that of the first epidemic.

Such differences lead one to think that some deaths not reported as plague were really due to plague, and so to suspect the figures relating to the “Mortality excluding plague,” and hence the “Total mortality” figures appear suspicious.

*As to paragraph 11.*—(At end of the paragraph) what original dose that of decoction or of prophylactic?

*As to paragraph 14.*—II, 39 and 25 = 64.

*As to paragraph 16.*—The summary only shows the population and not the inoculated and uninoculated populations.

*As to the figure sheets.*—At the end of the report referring to “attack among the inoculated”—

(a) two columns showing the dose and brew might with advantage be added:

(b) it might be better to give the days between inoculation and attack rather than giving the hours (column 9):

(c) is it necessary to put down the hour of attack; would not the day suffice (column 8)?

